



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,662	09/19/2003	Kendra Gallup	10030807-1	8572

7590 06/01/2005
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

NGUYEN, JOSEPH H

ART UNIT	PAPER NUMBER
----------	--------------

2815

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,662

Applicant(s)

GALLUP ET AL.

Examiner

Joseph Nguyen

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 16-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 is/are allowed.
- 6) ☒ Claim(s) 1-9, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-9 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Spaeth (US 5,981,945).

Regarding claim 1, Spaeth discloses on figure 5 a structure comprising a device 11 (col. 4, line 3) that emits an optical signal from a major surface of the device; a sub-mount 14 (col. 4, line 4) containing electrical traces 21, 22 (col. 3, line 12) that are electrically connected to the device; and a cap 15 (col.4, line 6) attached to the sub-mount so as to form a cavity enclosing the device; wherein the cap includes an optical element 8 (central portion of element 8) in a path of the optical signal.

Note that light from laser 6 will emit to the outside through optical element 8, which is a lens system (col. 3, line 17). Further, when unit 11 illustrated in figure 2 is inserted in a housing shown in figure 5 (col. 4, lines 3-4), elements 7, 8 will be part of the cap 15 enclosing the semiconductor device 6 and forming a cavity. Therefore, cap 15 also includes elements 7 and 8.

Spaeth further discloses on figure 5 an alignment post 20 glued to the cap 15 (col. 4, line 6) and aligned with the path of the optical signal. Note that light emitted from

Art Unit: 2815

the unit 11 (col. 4, line 5) will be guided through the window 16 and aligned in element 20. Therefore, element 20 can function as "alignment post".

Regarding claim 3, Spaeth discloses on figure 5 bonding of the cap 15 to the sub-mount 14 hermetically seals the cavity.

Regarding claim 4, Spaeth discloses on figure 5 the cap 15 comprising a spacer ring 7 (col. 3, line 16) attached to the sub-mount 14; and a plate 8 (side portion of element 8) attached to the spacer ring. Spacer ring 7 is part of unit 11. Since unit 11 is attached to the sub-mount 15, spacer ring is also attached to the sub-mount 14.

Regarding claim 5, Spaeth discloses on figure 2 the optical element 8 (central portion of element 8) is formed on the plate 8 (side portion of element 8).

Regarding claim 6, Spaeth discloses the spacer ring comprises a silicon substrate (col. 3, lines 52-54) having a hole formed there through.

Regarding claim 7, Spaeth discloses the plate 8 comprises a glass plate (col. 3, line 39).

Regarding claim 8, Spaeth discloses the plate 8 comprises a glass plate (col. 3, line 39).

Regarding claim 9, Spaeth discloses on figure 5 the alignment post 20 is glued to the cap 15 where the optical signal emerges from the cap.

Regarding claim 17, Spaeth discloses the optical element (central portion of element 8) is a lens (col. 3, line 17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spaeth, and further in view of Durocher et al. (US 2003/0160256).

Regarding claim 2, Spaeth discloses on figure 5 substantially all the structure set forth in the claimed invention except internal bonding pads within the cavity connected to the device and external terminals electrically connected to the internal bonding pads accessible outside the cavity. However, Durocher et al. discloses on figure 7 internal bonding pads 61 (para [0057], line 2) within the cavity connected to the device 59 (para [0056], line 1) and external terminals 37 (para [0056], lines 4-5) electrically connected to the internal bonding pads accessible outside the cavity. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spaeth by having internal bonding pads within the cavity connected to the device and external terminals electrically connected to the internal bonding pads accessible outside the cavity for the purpose of effectively providing electrical connectivity between the optical device and the electrical sources.

Regarding claim 16, Durocher et al. discloses on figure 7 flip chip bonding (para [0059], line 5) electrically connect bonding pads 61 on a front face of the device 59 to

the electrical traces 37 in the sub-mount 31 (para [0032], line 1), and the optical signal emerges from a back face of the device.

Note that the device 59 (LED chip) can emit light in different direction. Therefore, the optical signal or light can emerge from a back face of the device.

Allowable Subject Matter

Claims 18-26 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The reference (s) of record do not teach or suggest, either singularly or in combination at least the limitation of "an optical element residing within the cavity on an interior surface of the cap and in a path of the optical signal; and an alignment post glued to an external surface of the cap and aligned with the path of the optical signal " for claim 18.

Response to Arguments

Applicant's arguments with respect to claims 1-9, 16-17 have been considered but are moot in view of the new ground(s) of rejection.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 2815

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

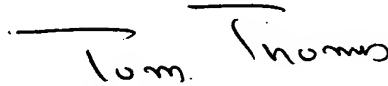
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN
May 25, 2005.

A handwritten signature in black ink that reads "Tom Thomas". The signature is written in a cursive style with a horizontal line above the first name.

TOM THOMAS
SUPERVISORY PATENT EXAMINER